RFA Work Plan Addendum

for

Calverton Naval Weapons Industrial Reserve Plant

Long Island, New York

Northern Division
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0138

OCTOBER 1995

C F BRAUN ENGINEERING CORPORATION

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RFA WORK PLAN ADDENDUM
FOR
CALVERTON NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
LONG ISLAND, NEW YORK

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
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Naval Facilities Engineering Command
10 Industrial Highway, Mall Stop #82
Lester, Pennsylvania 19113-2090

Submitted by:
C F Braun Engineering Corporation
993 Old Eagle School Road, Suite 415
Wayne, Pennsylvania 19087-1710

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PREPARED BY:

DAVID D. BRAYACK, P.E.
PROJECT MANAGER
PITTSBURGH, PENNSYLVANIA

APPROVED BY:

JOHN J. TREPANOWSKI
PROGRAM MANAGER
WAYNE, PENNSYLVANIA

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1.1 INTRODUCTION

The Calverton Naval Weapons Industrial Reserve Plant (NWIRP) is located in Suffolk County on Long Island, New York. The NWIRP is a Government-Owned Contractor Operated (GOCO) facility operated by Northrop/Grumman Corporation. The facility has an overall area of approximately 6000 acres. The majority of industrial activity is confined to the south central area of the facility and comprises approximately 3000 acres between two runways (refer to Figure 1-1). Industrial activities are related to the manufacture and assembly of aircraft and aircraft components. Hazardous waste generation is related to metal finishing and painting processes.

Based on the conclusions and recommendations of the RFA Sampling Visit report (HNUS, March 1995), additional work is necessary to define the presence of contamination at several of the sites investigated during the initial RFA Sampling Visit. The general approach for the additional testing was discussed during the fourth TRC meeting held in June 1995. The exact number, location, and analytes for testing was refined during an internal scoping meeting in August 1995. The purpose of this field sampling plan is to describe the new tasks to be performed as part of this supplemental RFA fieldwork. This work plan is being prepared as an addendum to the current RFA and RFI work plans for the facility. Applicable sections of these plans will not be repeated in this RFA Work Plan Addendum.

Five on-site areas and one off-site area will be investigated as part of the supplemental RFA. The five on-site areas, which are identified on Figure 1-1, are:

- Site 8 - Coal Pile Storage Area
- Site 9 - ECM Area
- Site 10A - Jet Fuel System Lab
- Site 10B - Engine Test House
- Southern Area

The off-site area is a golf course located south and hydraulically downgradient of the facility, (see Figure 1-1). A preliminary investigation of the groundwater and surface water on the golf course is being conducted to determine if there are any detectable levels of contaminants in these media, and if present, do they present any imminent risks.

1.2 SUMMARY OF FIELD ACTIVITIES

Table 1-1 summarizes the field activities for the six areas of investigation. A total of 36 temporary monitoring wells will be installed: 23 at predetermined locations and 13 at locations to be determined based on the results of quick turn-around groundwater sampling analyses. Subsurface soil samples will be collected at 22 temporary well/soil boring locations with split-spoon samplers. Split-spoon samples will be collected at two consecutive intervals of each boring at the water table interface, with one per boring being submitted for analytical testing. Four permanent monitoring wells will be installed: two at the ECM area and two in the Southern area. A total of 49 groundwater samples will be collected from two existing wells at the ECM area, the temporary and the new permanent wells, and one off-site well on the golf course. Two surface water samples will be collected from off-site ponds on the golf course. Based on the findings of the analytical testing, temporary well/soil borings and new permanent monitoring wells may be surveyed.

Area-specific tasks are described in Sections 1.3 through 1.8. Field responsibilities such as mobilization/demobilization, equipment calibration, etc. are listed in Section 1.9 and described in the RFA Sampling Visit Work Plan (HNUS, 1993). Field procedures will be performed in accordance with the RFA Sampling Visit Work Plan and Halliburton NUS Standard Operating Procedures. Data Quality Objective Level C deliverables will be requested from RECRA (the laboratory performing the routine turnaround VOC and total petroleum hydrocarbon analysis).

1.3 SITE 8 - COAL PILE STORAGE AREA

Objective: The objective of this investigation is to determine if VOC contamination (including freon) is present in the groundwater and/or if petroleum hydrocarbon contamination is present in the soils. If contamination is present, a second objective is to determine an approximate areal extent of the contamination.

Sampling Rationale: The coal pile area was reportedly used for the disposal of waste oils and solvents. Also, water from production wells located adjacent to the coal pile contain VOCs (including freon) at concentrations greater than drinking water standards. The RFA investigation concluded that low-level VOC contamination is present in the soils; and based on field observations and tentatively identified compounds (TICs) results, petroleum hydrocarbon (TPH) contamination may be present. The concentration of VOCs detected in soils was low enough that VOC contamination in groundwater would not be expected. However, based on comments from the TRC, VOC testing was included. During the RFA, no groundwater samples were tested to determine if a groundwater impact had occurred and soils were not tested for petroleum hydrocarbons.

Figure 1-2 shows the Coal Pile Storage area with the existing and proposed soil borings and monitoring wells. The Coal Pile Storage area was used for the storage of coal as a back-up fuel source for the boiler house. The coal was never used as a fuel source, and consequently it was used as road base material. It has been reported that solvents were placed on the coal pile, so that when the coal was burned, the solvents would be destroyed. Production wells, PW2 and PW3, have exhibited evidence of solvent contamination.

Results from the RFA Sampling Visit indicate that BTEX compounds and chlorinated organic compounds were detected at the site. BTEX compounds are naturally present in varying amounts in bituminous coal. The detection of 1,1-dichloroethane and 1,1,1-trichloroethane provides some evidence that the Coal Pile Storage area is a possible source area for the contamination observed in production wells, PW2 and PW3. According to the RFA conclusions, TCL volatile organics are not expected to be a current or future risk to human health or the environment. Additionally, the coal pile does not appear to be a continuing source of contamination. However, based on findings at soil boring CP-SB10, hydrocarbon (fuel/oil) contamination may be present in the soils and groundwater. A soil investigation for petroleum hydrocarbons and a groundwater investigation for VOCs will be performed in this area to define the nature and extent of contamination, if it is present.

Based on the RFA conclusions, Table 1-2 shows the field tasks, nomenclature, and sample analyses that will be performed to investigate the presence of free-product and contaminated soil and groundwater. Seven temporary monitoring wells will be installed within and downgradient of the former coal pile. Five of these wells, CP-TW01 through CP-TW05, will be installed at predetermined locations (refer to Figure 1-2). Two wells, CP-TW06 and CP-TW07, will be installed at locations based on the soil and groundwater sampling results of the first five temporary wells. The sample locations will be marked with a pin flag or stake and referenced with a tape measure to a minimum of two permanent landmarks (i.e. building or fence corners). The landmarks and/or sample locations will be surveyed in early 1996, if contamination is identified at this area.

Two split-spoon samples will be collected from two consecutive intervals at the water table interface of each temporary well boring. One split-spoon sample per boring will be analyzed for total petroleum hydrocarbons (TPH) using Method 8015 (modified) for both light and heavy fractions. Groundwater samples will be collected at each temporary well and analyzed for the abbreviated VOC list presented below. A 48 hour turn-around time will be requested. Groundwater sample duplicates will be collected at two temporary wells based on apparent contamination (to be determined by the field personnel) and sent to RECRA for the full TCL VOC list analysis.

benzene	ethylbenzene
1,1-dichloroethene (DCE)	cis-1,2-dichloroethene
trans-1,2-dicloroethene	1,1-dichloroethane (DCA)
trichloroethene (TCE)	Tetrachloroethene (PCE)
1,1,1-trichloroethane (TCA)	1,1,2-trichloroethane
chloroform	carbon tetrachloride
toluene	total xylenes (m, p, and o)
methylene chloride	freon-113

1.4 SITE 9 - ECM AREA

Objective: The objective of the testing in this area is to determine if VOC-contaminated groundwater, which has been identified off site and hydraulically downgradient of the Navy's property, is present on the Navy's property.

Sampling rationale: Groundwater contamination was found in offsite monitoring wells located hydraulically downgradient of the ECM area. The same chemical found in the groundwater (TCA) was used at the ECM area and there are no other potential upgradient source areas within approximately 1/2 mile. Soil testing at the ECM area did not find evidence of contamination. However, onsite groundwater samples were not collected. In addition to the ECM area potentially being the source of the offsite contamination, coal from the coal pile storage area (Site 8) was used as a road base material (see Section 1.3) along the perimeter of the site. The location of the coal is directly between the ECM area and the offsite monitoring wells. Drums located off site and adjacent to the ECM area are also possible sources.

Figure 1-3 shows the Electronic Counter Measure (ECM) area with the existing and proposed soil borings and monitoring wells. The ECM area is currently used for testing and evaluating electronic counter measure equipment. There is no manufacturing at this site, however, 1,1,1-trichloroethane (TCA) was used as a cleaning agent. It has been reported that approximately 10 gallons per year of TCA were used for cleaning. The investigation of the ECM area was initiated at the request of the Suffolk County Department of Health, because 1,1,1-trichloroethane was detected in samples collected from off-site county wells. Groundwater flow patterns estimated by Suffolk County indicated that the ECM area may be a potential source of contamination.

Results of the RFA Sampling Visit indicate that trace levels of non-halogenated organic compounds were detected in on-site soil samples. The 1,1,1-trichloroethane contamination was confirmed in off-site monitoring wells. However, the absence of this chemical in on-site soils indicates that the ECM area is not

not a continuing source of the contamination. During the RFA Addendum field work, temporary wells will be installed to verify this conclusion.

Table 1-3 shows the field tasks, nomenclature, and sample analyses that will be performed to investigate the presence of on-site groundwater contamination. Five temporary monitoring wells, ECM-TW01 through ECM-TW05 will be installed at predetermined locations (refer to Figure 1-3). Note that the temporary wells are to be placed both east and west of the perimeter road, to evaluate the potential for contaminated road-base material to be the source of observed groundwater contamination off site.

Two of the five temporary wells will be converted to permanent wells, ECM-MW01 and ECM-MW02, for future monitoring based on the groundwater sampling results of the first five temporary wells. The sample locations will be marked with a pin flag or stake and referenced with a tape measure to a minimum of two permanent landmarks (i.e. building or fence corners). The landmarks and/or sample locations will be surveyed in early 1996, if contamination is identified at this area.

Groundwater samples will be collected at each temporary well and analyzed for the abbreviated VOC list presented in Section 1.3. A 48 hour turn-around time will be requested. Groundwater samples will be collected from the two permanent wells and two existing wells (Suffolk County Wells adjacent to the fence, ECM SCA and MW-1) and sent to RECRA for full VOC list analysis.

1.5 SITE 10A - JET FUEL SYSTEM LAB AREA

Objective: The objective of this investigation is to determine if VOC contamination (including freon) is present in the groundwater and/or if petroleum hydrocarbon contamination in present in the soils. If contamination is present, a second objective is to determine an approximate areal extent of the contamination.

Sampling Rationale: The jet fuel system laboratory used bulk quantities of freon for testing. Also, groundwater from production wells located adjacent to the jet fuel systems laboratory contain concentrations of VOCs (including freon) at concentrations greater than drinking water standards. The RFA investigation did not find VOC contamination in the soils at this area. However the detection limits reported for VOCs were approximately 700 times higher than typical detection limits because of test interferences. Also, based on field observations and tentatively identified compounds (TICs) results, petroleum contamination may be present at the site. Grumman is currently removing floating free product from the groundwater. During the RFA, no groundwater samples were tested to determine if a groundwater impact had occurred and soils were not tested for petroleum hydrocarbons.

Figure 1-4 shows the Jet Fuel System Lab area with the existing and proposed soil borings and monitoring wells. During the RFA Sampling Visit, this area was included as part of facility-wide cesspool/leach fields investigation. The Jet Fuel System Lab is adjacent to a cesspool (refer to Figure 1-4). The investigation at the cesspool consisted of a soil gas survey and the drilling of one soil boring. Positive soil gas results were reported for 1,1-dichloroethene in two of the locations, however no positive results were reported in the soils sample collected from the soil boring. No other chemicals were detected in the soil gas samples. Metal concentrations detected in the soil boring were below background and NYS TAGM levels. Because of elevated, but unknown, hydrocarbons detected in the soil sample, elevated OVA readings, and the presence of a noticeable organic odor, there is evidence that fuel/oil contamination may be present in this area. A supplemental RFA investigation is warranted to determine the nature and extent of contamination, if it is present.

Table 1-4 shows the field tasks, nomenclature, and sample analyses that will be performed to investigate the presence of fuel/oil contamination. Six temporary monitoring wells, JFS-TW01 through JFS-TW06 will be installed at predetermined locations (refer to Figure 1-4). Three additional temporary wells, JFS-TW07 through JFS-TW09, will be installed at locations based on the soil and groundwater sampling results of the first six temporary wells. The sample locations will be marked with a pin flag or stake and referenced with a tape measure to a minimum of two permanent landmarks (i.e. building or fence corners). The landmarks and/or sample locations will be surveyed in early 1996, if contamination is identified at this area.

Two split-spoon samples will be collected from two consecutive intervals at the water table interface of each temporary well boring. For each boring, one split-spoon sample will be analyzed for total petroleum hydrocarbons (TPH) using Method 8015 (modified) for both light and heavy fractions. Groundwater samples will be collected at each temporary well and analyzed for the abbreviated VOC list presented in section 1.3. A 48 hour turn-around time will be requested. Groundwater sample duplicates will be collected at two temporary wells based on apparent contamination (to be determined by the field personnel) and sent to RECRA for full TCL VOC list analysis.

1.6 SITE 10B - ENGINE TEST HOUSE AREA

Objective: The objective of this investigation is to determine if VOC contamination (including freon) is present in the groundwater and/or if petroleum hydrocarbon contamination in present in the soils. If contamination is present, a second objective is to determine an approximate areal extent of the contamination.

Sampling Rationale: The RFA investigation concluded that low-level VOC contamination is present; and based on field observations and tentatively identified compounds (TICs) results, petroleum contamination may be present at the site. Grumman is currently removing floating free product from the groundwater. However, during the RFA, no groundwater samples were tested to determine if a groundwater impact had occurred and soils were not tested for petroleum hydrocarbons.

Figure 1-5 shows the Engine Test House area with the existing and proposed soil borings and monitoring wells. During the RFA Sampling Visit, this area was included as part of facility-wide cesspool/leach fields investigation. The Engine Test House is adjacent to a cesspool. The investigation at the cesspool consisted of a soil gas survey and the drilling of one soil boring. Positive results were reported for toluene, xylene, 1,1,1-trichloroethane, and total VOCs in the soil gas in four of the five samples. None of the soil gas results were confirmed by detection of these chemicals in the two collected soil samples. Freon 113 and metals were detected at concentrations less than the NYS TAGM values. Several unknown hydrocarbons and one tentatively identified hydrocarbon (1,1,3 tri-methylcyclohexane) were detected in one soil sample. Because of the hydrocarbons detected in the soil sample, elevated OVA readings, and the presence of a noticeable organic odor, there is evidence that fuel/oil contamination may be present in this area. A supplemental RFA investigation is warranted to determine the nature and extent of contamination, if it is present.

Table 1-5 shows the field tasks, nomenclature, and sample analyses that will be performed to investigate the presence of fuel/oil contamination. Four temporary monitoring wells, ETH-TW01 through ETH-TW04 will be installed at predetermined locations (refer to Figure 1-5). Two additional temporary wells, ETH-TW05 and ETH-TW06, will be installed at locations based on the soil and groundwater sampling results of the first four temporary wells. The sample locations will be marked with a pin flag or stake and referenced with a tape measure to a minimum of two permanent landmarks (i.e. building or fence corners). The landmarks and/or sample locations will be surveyed in early 1996, if contamination is identified at this area.

Two split-spoon samples will be collected from two consecutive intervals at the water table interface of each temporary well boring. For each boring, one split-spoon sample will be analyzed for total petroleum hydrocarbons (TPH) using Method 8015 (modified) for both light and heavy fractions. Groundwater samples will be collected at each temporary well and analyzed for the abbreviated VOC list presented in section 1.3. A 48 hour turn-around time will be requested. Groundwater sample duplicates will be collected at two temporary wells based on apparent contamination (to be determined by the field personnel) and sent to RECRA for full TCL VOC list analysis.

1.7 SOUTHERN AREA

Objective: The objective of the testing in this area is to determine if VOC-contamination in the groundwater is present on the Navy's property. If the contamination is present on the Navy's property, a second objective is to attempt to determine the origin of the contamination.

Sampling rationale: Groundwater contamination was found in a monitoring well located hydraulically downgradient of this area. Upgradient source area investigations, including those at the Site 6A - Fuel Depot, Site 10B - Engine Test House, and an adjacent cesspool/leach field area were not conclusive in identifying the source of this contamination. It should be noted that the chemicals in the monitoring well were also identified in these upgradient sources. Other potential sources of the offsite contamination exist including topographic depressions in the area and the coal road base material (from the coal pile storage area - See section 1.3).

Figure 1-6 shows the Southern Area with the proposed monitoring well locations. No field investigation was performed during the RFA Sampling Visit. However, in an off-site Suffolk County monitoring well, 1,1,1 trichloroethane, 1,1 dichloroethene, and chloroethane have been detected at concentrations greater than NYS groundwater quality standards. Previous soil gas and soil sample investigations of the Engine Test House and adjacent cesspool, which are potential sources, have not indicated groundwater contamination by these chemicals. Therefore, it is necessary to investigate the source of the off-site contamination by sampling the groundwater at the southern boundary of the facility. If contamination is detected, the investigation will proceed upgradient.

Table 1-6 shows the field tasks, nomenclature, and sample analyses that will be performed to investigate the presence of on-site groundwater contamination. Three temporary monitoring wells, SA-TW01 through SA-TW03 will be installed at predetermined locations along the southern site boundary (refer to Figure 1-6). If contamination is detected on-site, three additional wells, SA-TW04 through SA-TW06, will be installed upgradient of the first three wells based on the groundwater sampling results of the first three wells. Again, if contamination is detected, the procedure will be repeated, i.e., three additional monitoring wells, SA-TW07 through SA-TW09, will be installed upgradient of the second three wells, in order to determine the potential source(s) of contamination. Two of the potential nine temporary wells will be converted to permanent monitoring wells based on groundwater sampling results. The sample locations will be marked with a pin flag or stake and referenced with a tape measure to a minimum of two permanent landmarks (i.e. building or fence corners). The landmarks and/or sample locations will be surveyed in early 1996, if contamination is identified at this area.

Groundwater samples will be collected at each temporary well and analyzed for the abbreviated VOC list presented in Section 1.3. A 48 hour turn-around time will be requested. Groundwater samples will be collected from the two permanent wells and sent to RECRA for full TCL VOC list analysis.

1.8 GOLF COURSE

Objective: The objective of the testing in this area is to determine if VOC-contaminated groundwater from the Navy's property has migrated to potential receptors.

Sampling rationale: The golf course is hydraulically downgradient of the Fire Training Area (Installation Restoration Program, Site 2) at the NWIRP and uses relatively large quantities of groundwater for irrigation and potable water supply. The well where this water is generated from could capture contaminated groundwater from the Navy's property. In addition, there are several surface water bodies in the area including Swan Pond and local water traps on the golf course. Groundwater may discharge to surface water bodies.

Figure 1-1 shows the general location of the off-site golf course and Swan pond. Table 1-7 shows the field tasks, nomenclature, and analyses that will be performed in order to identify potential contamination to off-site locations due to the movement of contamination from the facility. One groundwater sample will be collected from a golf course production well, shown as GC-MW01, and sent to RECRA for full TCL VOC list analysis. Two surface water samples will be collected: one from a natural water trap on the golf course immediately south of the facility boundary (GC-SW01) and one from the northwest corner of Swan Pond (GC-SW02). These samples will also be sent to RECRA for full TCL VOC list analysis.

1.9 FIELD RESPONSIBILITIES

The Field Operations Leader (FOL) will coordinate the field activities. The following activities will be performed in accordance with the RFA Sampling Visit Work Plan and referenced Halliburton NUS SOPs:

- Mobilization/demobilization
- Equipment calibration
- Sample handling
- Equipment decontamination
- Residue management
- Documentation and chain-of-custody

TABLE 1-1

SUMMARY OF FIELD ACTIVITIES
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

Activity	Site 8 Coal Pile Storage Area	Site 9 ECM Area	Site 10A Jet Fuel System Lab Area	Site 10B Engine Test House Area	Southern Area	Golf Course	Total
Install temporary monitoring wells	5/2[1]	5	6 /3[1]	4/2[1]	3 /6[1]	-	36
Collect subsurface soil samples - TPH	5/2[2]	-	6/3[2]	4/2[2]	-	-	44[2]
Install permanent monitoring wells	-	2	-	-	2	-	4
Collect groundwater samples for quick turn analysis - VOCs	7	5	9	6	9	-	36
Collect groundwater samples for RECRA analysis - VOCs	2	4	2	2	2	1	13
Collect surface water samples for RECRA analysis - VOCs	-	-	-	-	-	2	2
Conduct surveying (Permanant wells only)	-	X	-	-	X	-	-

(1) 5/2 indicates that 5 temporary well locations are predetermined and 2 locations will be field-determined based quick turn-around results of the predetermined locations.

(2) 44 total split spoon samples: 2 split spoon samples each at 22 soil boring locations, 1 split spoon sample per location to be submitted for analytical testing, with selection to be based on presence of oil staining and/or samples exhibiting an elevated OVA reading.

(3) RECRA is the Basic Ordering Agreement (BOA) laboratory selected to develop legally defensable analytical data.

TABLE 1-2

SUMMARY OF FIELD TASKS FOR SITE 8 - COAL PILE STORAGE AREA
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

Activity	Nomenclature	Analysis	Comment
Install 5 temporary monitoring wells at predetermined locations.	CP-TW01 through CP-TW05	-	-
Install 2 temporary monitoring wells based on groundwater sampling results at initial 5 wells.	CP-TW06 and CP-TW07	-	-
Collect 2 split-spoon samples per boring at 7 temporary monitoring well locations. Submit one sample per boring to RECRA.	CP-SB01-XXXX through CP-SB07-XXXX	TPH - Method 8015 for both light and heavy fractions	XXXX is the interval of collection, e.g. 0608 means from 6 to 8 feet bgs
Collect groundwater samples from 7 temporary wells for quick turn-around analysis.	CP-TW01 through CP-TW07	Abbreviated VOC list	-
Collect duplicate groundwater samples from 2 temporary monitoring wells (BOA Lab).	CP-TWXX and CP-TWXX	Full TCL VOC list	XX is the temporary well of collected sample

TABLE 1-3

SUMMARY OF FIELD TASKS FOR SITE 9 - ECM AREA
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

Activity	Nomenclature	Analysis	Comment
Install 5 temporary monitoring wells at predetermined locations.	ECM-TW01 through ECM-TW05	-	-
Convert 2 temporary wells to permanent wells based on groundwater sampling results at initial 5 wells.	ECM-MW01 and ECM-MW02	-	-
Collect groundwater samples from 5 temporary wells for quick turn-around.	ECM-TW01 through ECM-TW05	Abbreviated VOC list	-
Collect groundwater samples from 2 new permanent and 2 existing monitoring wells (BOA Lab).	ECM-GW01 and ECM-GW02 and 2 existing wells ECM-SCA and MW-1	Full TCL VOC list	Sample county wells closest to fence.
Survey 2 new permanent monitoring well locations.	-	-	-

TABLE 1-4

SUMMARY OF FIELD TASKS FOR SITE 10A - JET FUEL SYSTEM LAB AREA
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

Activity	Nomenclature	Analysis	Comment
Install 6 temporary monitoring wells at predetermined locations.	JFS-TW01 through JFS-TW06	-	-
Install 3 temporary monitoring wells based on groundwater sampling results at initial 6 wells.	JFS-TW07 and JFS-TW09	-	-
Collect 2 split-spoon samples per boring at 9 temporary monitoring well locations. Submit one sample per boring to RECRA.	JFS-SB01-XXXX through JFS-SB09-XXXX	TPH - Method 8015 for both light and heavy fractions	XXXX is the interval of collection, e.g. 0608 means from 6 to 8 feet bgs
Collect groundwater samples from 9 temporary wells for quick turn-around.	JFS-TW01 through JFS-TW09	Abbreviated VOC list	-
Collect duplicate groundwater samples from 2 temporary monitoring wells (BOA Lab).	JFS-TWXX and JFS-TWXX	Full TCL VOC list	XX is the temporary well of collected sample

TABLE 1-5

SUMMARY OF FIELD TASKS FOR SITE 10B - ENGINE TEST HOUSE AREA
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

Activity	Nomenclature	Analysis	Comment
Install 4 temporary monitoring wells at predetermined locations.	ETH-TW01 through ETH-TW04	-	-
Install 2 temporary monitoring wells based on groundwater sampling results at initial 4 wells.	ETH-TW05 and ETH-TW06	-	-
Collect 2 split-spoon samples per boring at 6 temporary monitoring well locations. Submit one sample per boring to RECRA.	ETH-SB01-XXXX through ETH-SB06-XXXX	TPH - Method 8015 for both light and heavy fractions	XXXX is the interval of collection, e.g. 0608 means from 6 to 8 feet bgs
Collect groundwater samples from 6 temporary wells for quick turn-around.	ETH-TW01 through ETH-TW09	Abbreviated VOC list	-
Collect duplicate groundwater samples from 2 temporary monitoring wells (BOA Lab).	ETH-TWXX and ETH-TWXX	Full TCL VOC list	XX is the temporary well of collected sample

TABLE 1-6

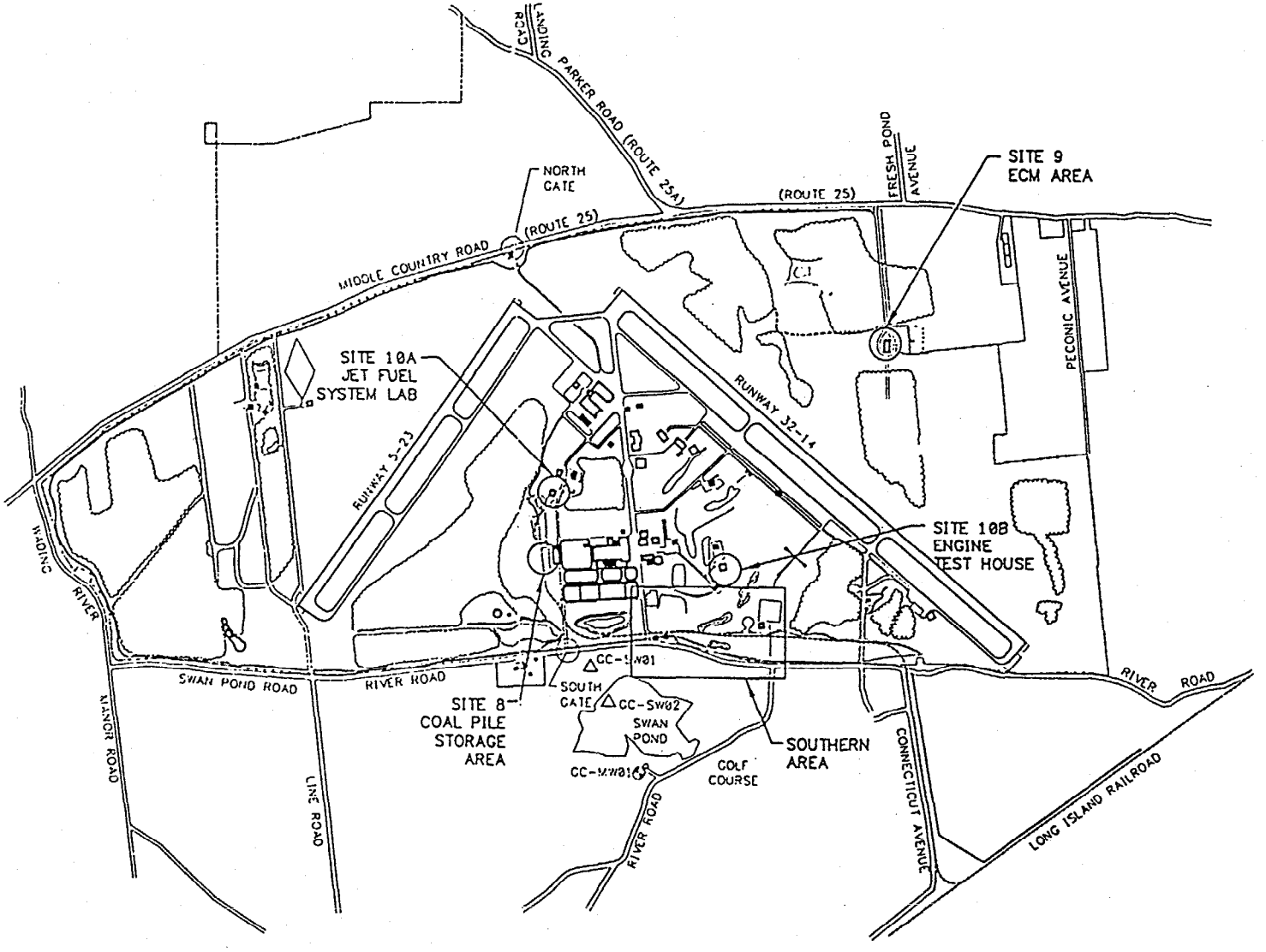
SUMMARY OF FIELD TASKS FOR THE SOUTHERN AREA
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

Activity	Nomenclature	Analysis	Comment
Install 3 temporary wells at predetermined locations.	SA-TW01 through SA-TW03	-	-
Install 3 additional wells at locations upgradient to first 3 wells based on groundwater sampling results.	SA-TW04 through SA-TW06	-	-
Install 3 additional wells at locations upgradient to second 3 wells based on groundwater sampling results.	SA-TW07 through SA-TW09	-	-
Convert 2 temporary wells to permanent wells based on groundwater sampling results at initial wells.	SA-MW01 and SA-MW02	-	-
Collect groundwater samples from 9 temporary wells for quick turn-around.	SA-TW01 through SA-TW09	Abbreviated VOC list	-
Collect groundwater samples from 2 permanent wells (BOA Lab).	SA-TWXX and SA-TWXX	Full TCL VOC list	XX is the temporary well of collected sample

TABLE 1-7

SUMMARY OF FIELD TASKS FOR THE GOLF COURSE
RFA ADDENDUM, NWIRP CALVERTON, NEW YORK

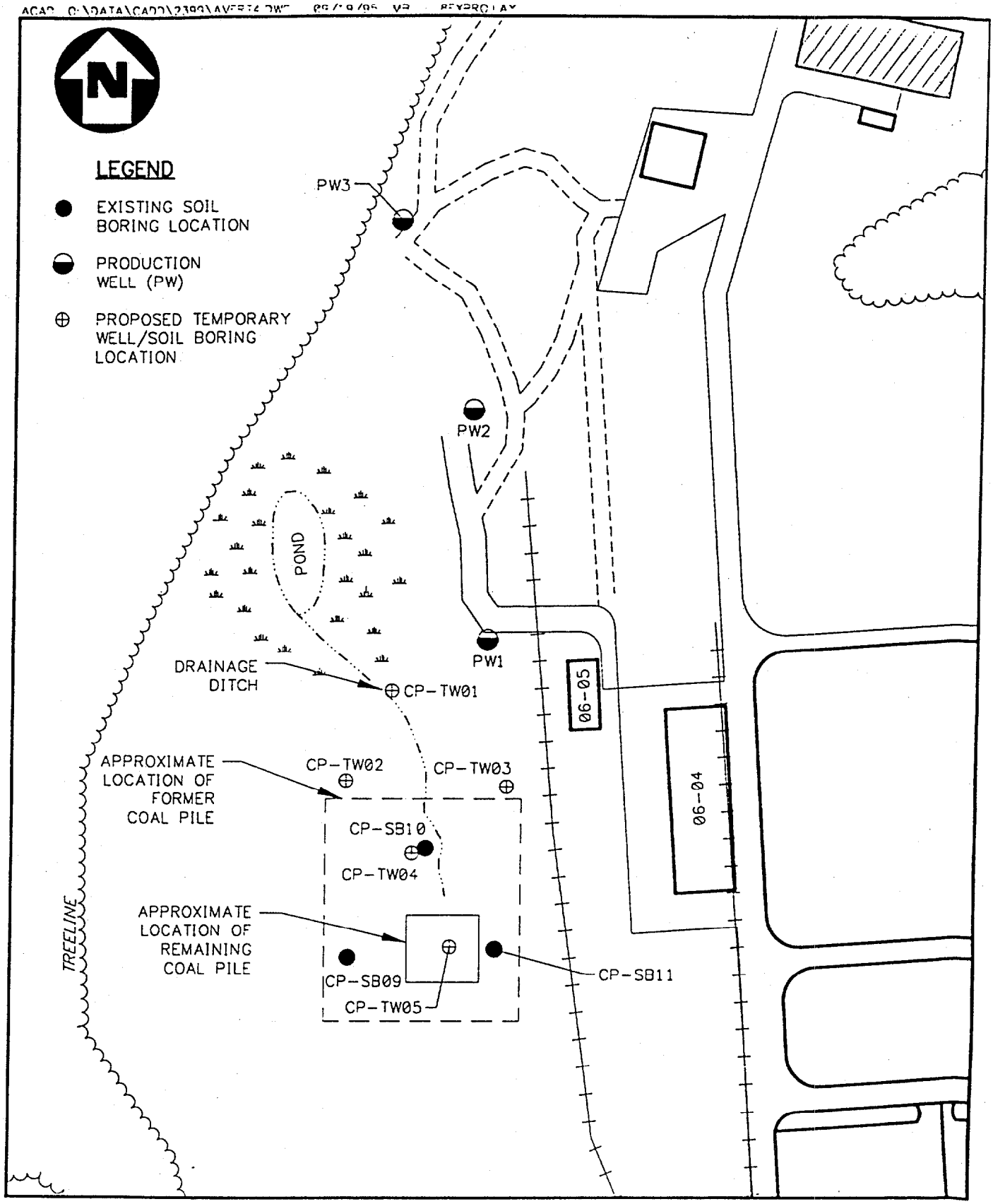
Activity	Nomenclature	Analysis	Comment
Collect 1 groundwater sample from existing golf course production well.	GC-GW01	Full TCL VOC list	-
Collect 2 surface water samples: 1 from natural golf course trap south of facility and 1 from Swan Pond.	GC-SW01 and GC-SW02	Full TCL VOC list	-



LOCATION OF SITES
RFA ADDENDUM
NWIRP, CALVERTON, NEW YORK

FIGURE 1-1

C.F. BRAUN
ENGINEERING CORP.



APPROXIMATE SCALE 1" = 250'

EXISTING AND PROPOSED SAMPLING LOCATIONS
SITE 8 – COAL PILE STORAGE AREA
RFA ADDENDUM
NWIRP, CALVERTON, NEW YORK

FIGURE 1-2

C.F. BRAUN
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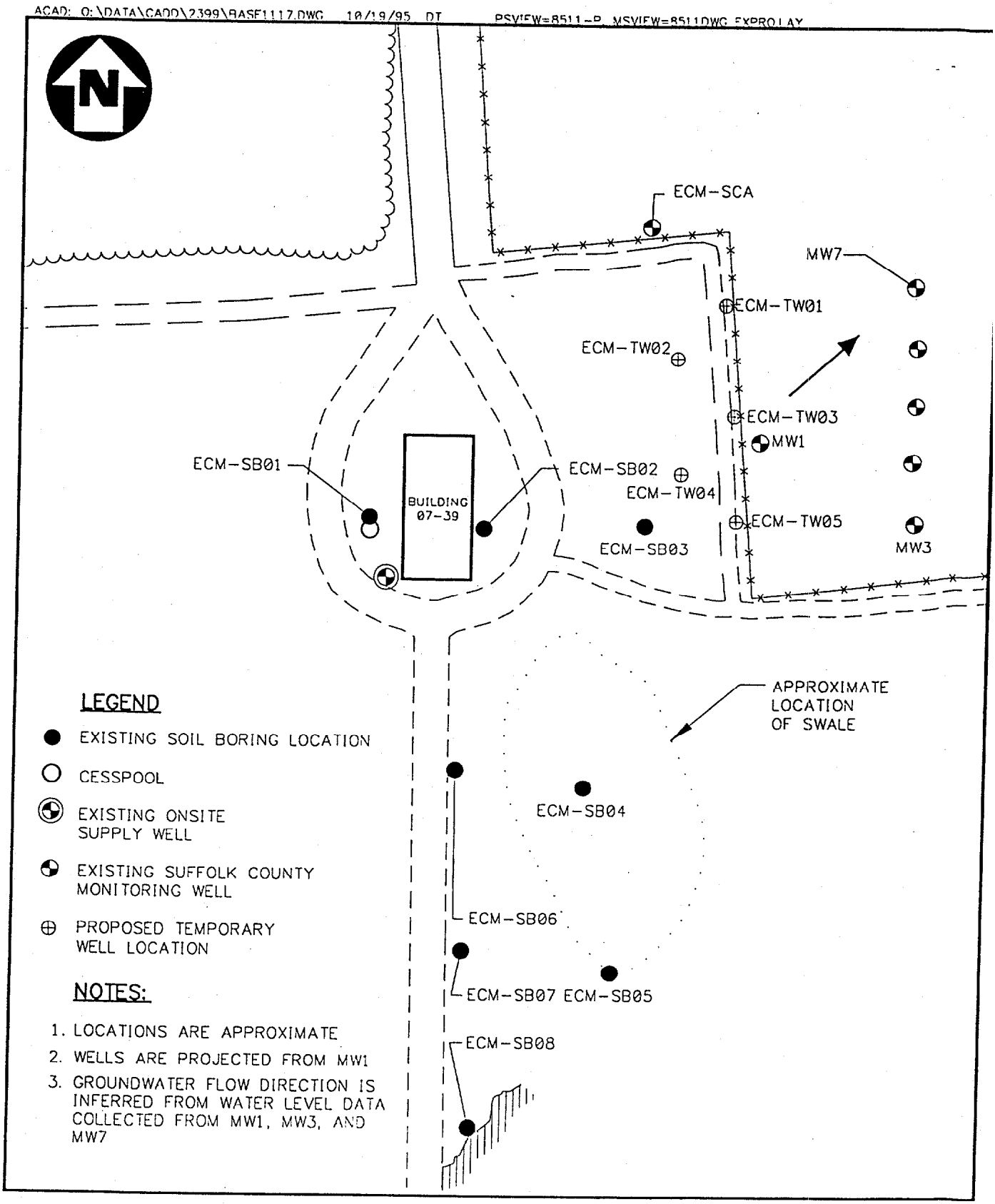

APPROXIMATE SCALE 1" = 150'

EXISTING AND PROPOSED SAMPLING LOCATIONS
SITE 9 – ECM AREA
RFA ADDENDUM
NWIRP, CALVERTON, NEW YORK

FIGURE 1-3

C.F. BRAUN
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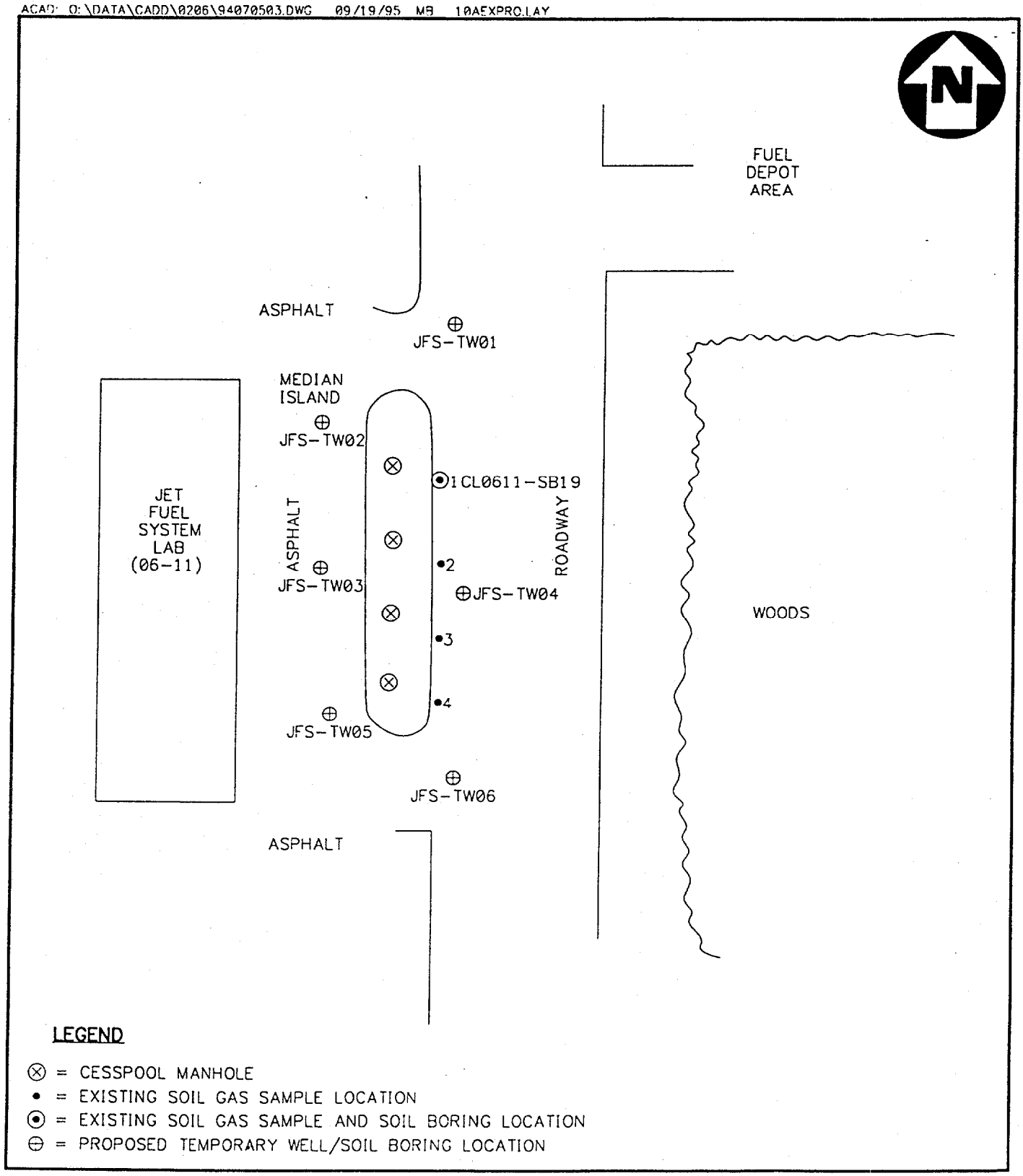

APPROXIMATE SCALE 1" = 100'

EXISTING AND PROPOSED SAMPLING LOCATIONS
SITE 10A – JET FUEL SYSTEM LAB (06-11)
RFA ADDENDUM
NWIRP, CALVERTON, NEW YORK

FIGURE 1-4

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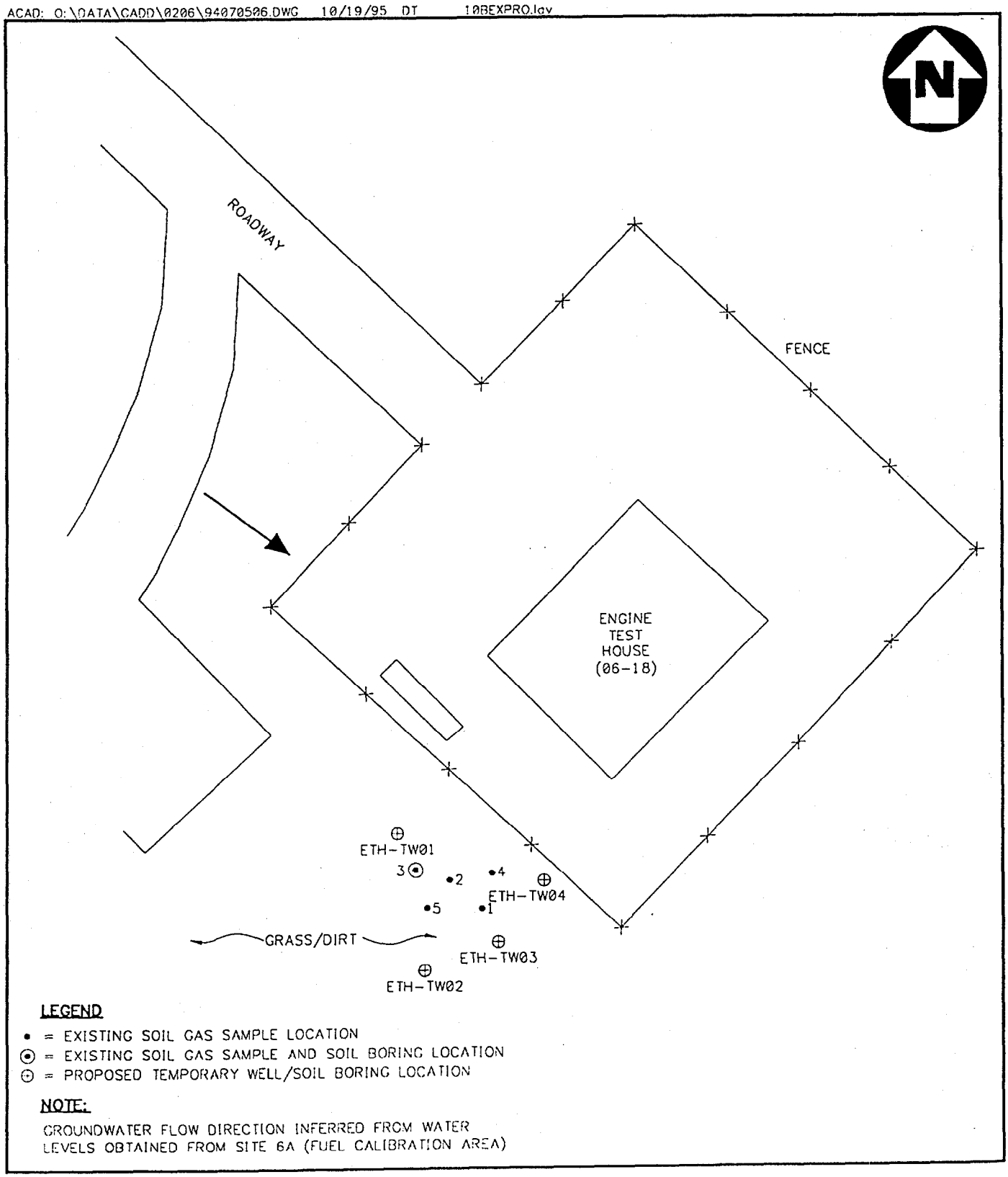

APPROXIMATE SCALE 1" = 100'

FIGURE 1-5

EXISTING AND PROPOSED SAMPLING LOCATIONS
SITE 10B – ENGINE TEST HOUSE (06-18)
RFA ADDENDUM
NWIRP, CALVERTON, NEW YORK

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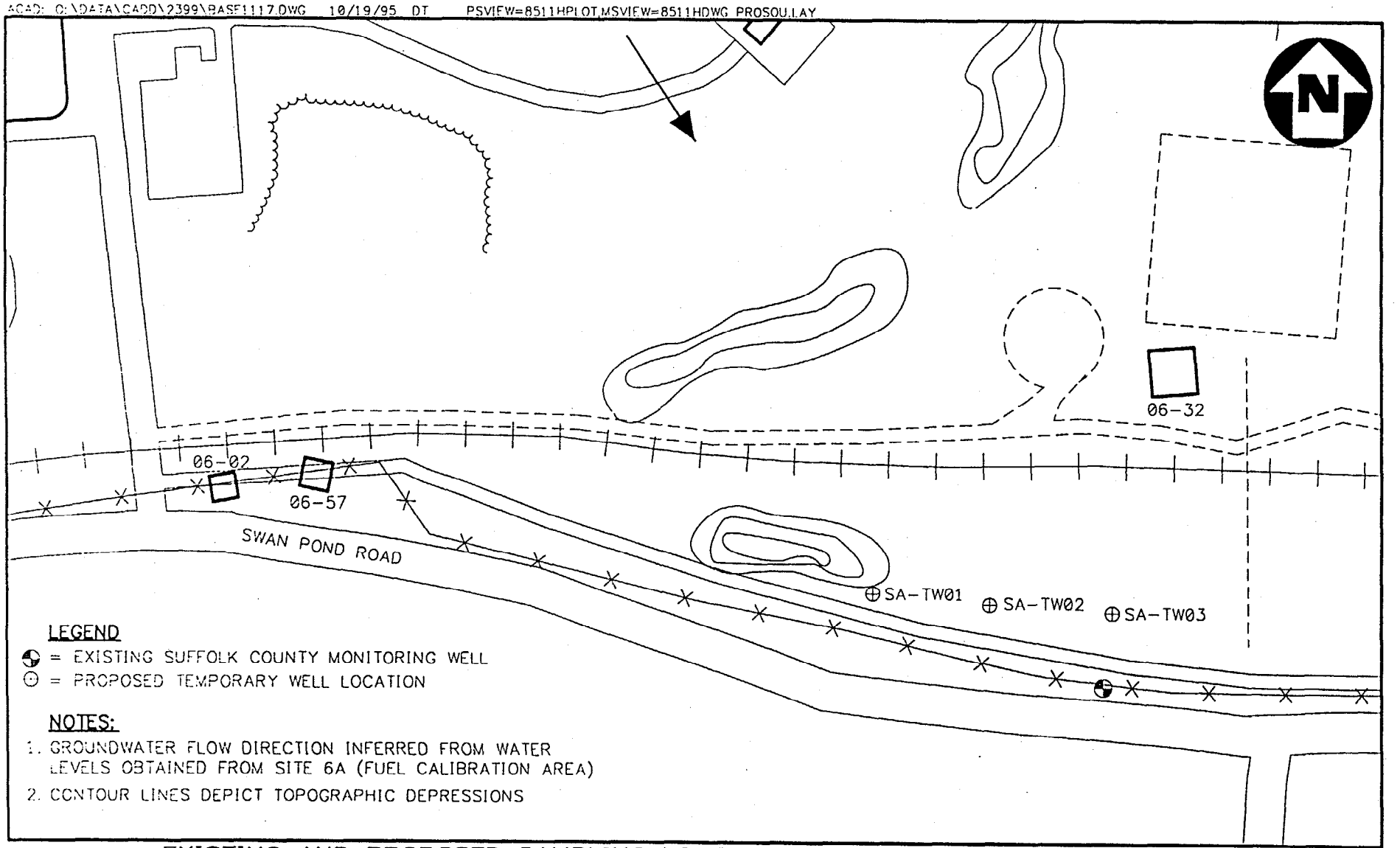

EXISTING AND PROPOSED SAMPLING LOCATIONS
SOUTHERN AREA
RFA ADDENDUM
NWIRP, CALVERTON, NEW YORK

0 300 600
SCALE IN FEET

FIGURE 1-6

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